



Hudson Bay Mining and Smelting Co., Limited  
Annual Report 1973



**Cover photos:** An enlargement of photo taken at the bottom of access decline in Ghost Lake Mine, Man.

**Left:** Maintenance room 3,145 feet below surface in the potash mine of the Sylvite of Canada division.

**Right:** Exploration crew using a scintillometer during a recent geophysical survey in northern Manitoba.



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## Directors

E. S. Austin, Delta, B.C.  
Former President, Hudson Bay Mining  
H. R. Fraser, Toronto  
Chairman, Hudson Bay Mining  
A. T. Lambert, Toronto  
Chairman and Chief Executive Officer,  
The Toronto-Dominion Bank  
C. S. Lee, Calgary  
Chairman, Western Decalta Petroleum Limited  
J. F. McCarthy, Old Greenwich, Conn.  
Former Secretary and Treasurer, Hudson Bay Mining  
H. A. McKenzie, Toronto  
President, Hudson Bay Mining  
H. C. F. Mockridge, Q.C., Toronto  
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South Africa Limited  
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A. Sweatman, Q.C., Winnipeg  
Senior Partner, Thompson, Dorfman, Sweatman  
J. D. Taylor, Q.C., Toronto  
President, Anglo American Corporation of Canada Limited

W.A. Green  
Director Emeritus

## Officers

H. R. Fraser  
Chairman of the Board  
H. A. McKenzie  
President  
J. S. Warick  
Senior Vice-President - Operations  
J. L. Carpenter  
Senior Vice-President - Marketing  
C. O. Buchanan  
Vice-President - Metal Sales  
K. S. Dalton  
Vice-President and Treasurer  
Dr. J. B. Howkins  
Vice-President - Exploration  
L. W. Ogryzlo  
Vice-President - Development  
J. R. G. Sadler  
Vice-President - Mining  
Dr. C. L. Sarthou  
Vice-President - Marketing (Sylvite Division)  
C. K. Taylor, Q.C.  
Vice-President, Secretary and General Counsel  
G. A. C. MacRae  
Comptroller  
S. A. Hayward  
Assistant Secretary and Assistant Treasurer

*Construction crew at Flin Flon, Manitoba, moving in new equipment for the new anode-casting plant.*

## Report of the Directors

### Introduction

The past year has been a successful one for the mining industry everywhere and so, too, for your Company. Record earnings are very welcome after two lean years. In addition, 1973 saw our heavy investments in the fertilizer and chemical industry move into a phase of real profitability, and the buildup of a substantial position in the oil and gas industry.

Nevertheless, the good financial results have not dispelled the basic uneasiness which besets the national mining industry. High profits in mining are essentially a reflection of high prices. These will recede with the turn of the cycle but the inflation which has followed in their wake will not. Important sectors of the Canadian mining industry, because they are based on small and scattered deposits, because of heavy transport costs and because of high living standards, are quite marginal in world terms.

High prices and profits have obscured the effects on the industry's cost structure of heavy wage settlements necessitated by soaring living costs and the need to attract labor to remote areas, of steeply rising capital costs and of expensive environmental programs. These will have their effects on future profits, on the attractiveness of mining investment and, indeed, on the country's mineral reserves.

Ore by definition is material with a mineral content that can be recovered economically. Subgrade material that has to be bypassed during mining can almost never be recovered—even if conditions subsequently improve. In a society that is becoming obsessed with the conservation of natural resources there is a surprising unconcern that every inflationary force, every fiscal device that taxes revenue rather than profits, raises the cut-off grade of all our ores and results in the most absolute loss of our natural resources. Complacency in that our rates of inflation do not exceed those of other lands is ill-judged in a country which already enjoys a very high living standard and which depends for its future on resources in a remote hinterland which it is becoming increasingly costly to develop.

The past year has also seen an escalation in the fiscal power struggle between the federal government and the provinces. The resource industries have largely been the battlefield for this contest and in the fashion of modern warfare the terrain has tended to suffer more than the contestants. Resource industries have been subjected to a multiplicity of measures and proposals which, we must hopefully assume, have been designed

to establish tactical advantage for the participants rather than to reflect considered programs for the industry. They have, nevertheless, created confusion and uncertainty which, given the long gestation periods of mining projects, will disrupt the industry for years to come. Incidental to this has been a certain amount of gratuitous vilification of the mining industry which, added to its inherent financial risks and physical hardships, has not made it any easier to find the people or the finance necessary to secure the orderly development of one of the country's basic resources.

It is hard to believe that this situation can long be tolerated and in the expectation that a compatible environment will be restored we have, wherever possible, pursued our studies to assure a pipeline of new developments of the future.

### Earnings

Record earnings were realized by the Company for 1973. Earnings before extraordinary items were \$44,584,830, or \$4.93 per share, compared with \$11,379,312, or \$1.26 per share, in 1972. Net earnings, after recovery of a portion of the loss on the Wellgreen Mine, were \$47,288,830, or \$5.23 per share. Net earnings for 1972 were \$2,861,312, or 32¢ per share, in 1972 after the extraordinary write-off pertaining to the Wellgreen loss.

The substantial increase in profit was due primarily to the higher prices for the Company's principal products: copper, zinc, gold, silver and potash.

There was a recovery of \$2,704,000 of the loss on the Wellgreen Mine, estimated in 1972 to be \$8,518,000, because both metal prices and production during 1973 were higher than anticipated.

Earnings per share are calculated on 9,041,433 outstanding shares, which do not include 900,000 shares

### Comparative financial summary

	1973	1972
Operating revenue . . . .	\$180,998,258	\$107,843,689
Other income . . . . .	6,920,632	2,783,835
Net earnings . . . . .	47,288,830	2,861,312
Working capital . . . . .	60,366,438	47,821,208
Marketable securities . .	2,541,190	2,541,190
Other investments . . . .	22,844,695	12,442,064
Capital employed . . . . .	231,895,688	194,260,094
Long-term debt . . . . .	27,778,000	27,778,000
Retained earnings . . . .	127,348,225	98,142,261
Earnings per share . . . .	5.23	.32
Dividends per share . . .	2.00	.80

to be issued, subject to shareholder approval, in connection with the acquisition of the shares and debenture in Western Decalta Petroleum Limited. The effect of the additional issue of shares is fully set out in the Notes to the Consolidated Financial Statements.

### Dividends

Dividends declared for 1973 totalled \$18,082,866, equal to \$2 per share, compared with \$7,233,146, or 80¢ per share, for 1972. The dividend declarations for 1973 included a year-end extra of 50¢ per share.

### Financial

The high metal prices realized during 1973 resulted in increased earnings and have ensured that the Company's financial position remains very strong.

Capital expenditures during 1973 totalled \$18,176,654, of which \$14,732,000 were spent in the Flin Flon-Snow Lake area, principally on underground mine development and the modernization and environmental programs being implemented in the Flin Flon metallurgical complex. Other significant expenditures were \$1,761,269 by Francana Oil & Gas Ltd., \$478,000 by the Sylvite of Canada potash division and \$1,430,000 for the new zinc oxide plant in Bramalea, Ontario.

Capital expenditures budgeted for 1974 amount to \$24,426,000.

During 1973 the Company increased its interest in Terra Chemicals International, Inc. from 15% to 35% through the conversion of a portion of the preferred shares held in Terra and the purchase of shares of certain smaller shareholders.

The Company's oil and gas subsidiary, Francana Oil & Gas Ltd., increased its interest in Trend Exploration Limited from 22% to 30% by means of additional capital stock issues. As a result of these issues, and by the conversion of the remainder of the preferred shares held in Francana, the Company's interest in Francana increased from 52% to 55%.

In line with current accounting practice, significant investments such as those of Francana in Trend and of the Company in Terra have been accounted for by the equity method in 1973. A full explanation of this change is included in the Notes to the Consolidated Financial Statements.

The Company's equity in Stikine Copper Limited increased during 1973 from 23% to 30% as a result of the drilling, engineering and economic evaluation programs detailed elsewhere in this report.



The investment portfolio of stocks in Canadian companies remained unchanged from a year ago. The market value of the stocks was \$2,563,281 at year-end, which approximated cost. Stock transactions made during the year resulted in a net gain of \$481,248.

Working capital increased from \$47,821,208 at the end of 1972 to \$60,366,438 at year-end 1973.

### Reserves

**Base metals:** Proven reserves of copper-zinc ore in the Company's mines in the Flin Flon-Snow Lake area at year-end totalled 18,000,600 tons, assaying gold, 0.034 oz. per ton; silver, 0.52 oz. per ton; copper, 3.11% and zinc, 2.9%. Ore reserves at year-end 1972 totalled 17,283,600 tons.

A total of 1,810,849 tons was mined during 1973; the tonnage added to reserves was 2,527,849 tons, a net gain of 717,000 tons.

**Potash:** Proven reserves at the Company's Sylvite of Canada Division, near Rocanville, totalled 364 million tons, compared with 311 million tons at year-end 1972.

**Oil and gas:** Domestic proven reserves held by Francana Oil and Gas Ltd., in which the Company holds a 54.7% interest, at year-end were as follows: crude oil—14.4 million barrels, compared with 15.4 million barrels at year-end 1972; natural gas—89.4 billion cubic feet, compared with 84.1 billion cubic feet at the end of 1972. Francana also had 168,000 barrels of natural gas liquids and 17,000 tons of sulphur at year-end. These reserves do not include those held by Trend Exploration Limited in Canada, the U.S. and Indonesia.

### Prices

Prices for copper, zinc, gold and silver, apart from short-term fluctuations, increased steadily throughout 1973.

The North American price of copper at the beginning of the year was 50.5¢ (Cdn.) per lb., compared with 47.7¢ (Cdn.) on the London Metal Exchange, the overseas price. By year-end, the LME price had risen to 91.3¢ (Cdn.) per lb. but the North American price had increased to only 74¢ per lb.

Prices for zinc at the beginning of the year were 19.5¢ per lb. in North America and 18.35¢ per lb. in Europe, the European producer price. By year-end the European producer price has risen to 31.42¢ per lb., compared with 31¢ per lb. in North America.

Gold advanced from \$65.10 per oz. at the beginning of the year to \$112.25 per oz. on December 31.

The price for silver at the beginning of the year was \$2.03 per oz. and had increased to \$3.26 per oz. by year-end.

The price for potash remained at the Saskatchewan Government-set floor price of \$21 per ton from January 1 to September 1, then rose to \$24 and at year-end was \$25.50 per ton.

### Markets

The Company's main products, copper, zinc and potash, were sold in Canada, the U.S. and overseas during 1973; the percentages shown below reflect the geographic distribution for 1973 (1972 percentages are shown in brackets) relative to production.

**Copper:** Canada—35% (27%); U.S.—7% (nil); overseas—58% (73%). Although sales overseas were made on the basis of London Metal Exchange prices, which were considerably higher than North American prices, it is the Company's policy to satisfy the requirements of its Canadian customers before making export commitments.

**Zinc:** Canada—48% (45%); U.S.—37% (42%); overseas—15% (13%).

**Potash:** Canada—8% (7%); U.S.—62% (45%); overseas—30% (48%). Demand for potash from the U.S. Midwest continued to improve as farmers responded to the rising prices for agricultural commodities.

### Shareholders

On December 31, the number of shareholders of record was 14,400, compared with 14,254 at year-end 1972. There were 11,147 shareholders of Canadian registry, holding 86.9% of the outstanding shares.

### Directors

A new by-law increasing the number of Directors from 10 to 12 received shareholder approval at the Annual and Special General Meeting held on April 27, 1973.

H. A. McKenzie, formerly Executive Vice-President of the Company, and J. D. Taylor, Q.C., President of Anglo American Corporation of Canada Limited, were elected to fill the newly created vacancies.

Two new appointments to the Board of Directors were announced on December 14, 1973, following a meeting of the Board in Flin Flon, Manitoba. The new directors are:

Charles S. Lee, Chairman and Chief Executive Officer of Western Decalta Petroleum Limited, of Calgary;

Alan Sweatman, Q.C., a senior partner of Thompson, Dorfman, Sweatman, barristers and solicitors in Winnipeg.

The new appointments filled the vacancies on the Board created by the resignations of C. V. Whitney, President of Whitney Industries, Inc., of New York, and W. A. Green, retired. Mr. Whitney and Mr. Green are former Presidents of Hudson Bay Mining and were long-time Directors.

Mr. Whitney, a founding Director, served as Chairman from 1931 to 1957 at which time he was elected President as well. He retired from both positions in April, 1962. Mr. Whitney said increasing involvement with his other business interests made his resignation necessary.

Mr. Green, appointed a Director in 1956, resigned for health reasons but accepted an honorary directorship. He retired from the Company as President in April, 1964, completing 39 years of service. During that time he held a number of senior positions and was President for two years, 1962-1963.

The Board is deeply grateful for the many and varied contributions both men made during their long and valued association with the Company as senior officers.

### Executive appointments

H. Ronald Fraser, Chairman and a Director of Anglo American Corporation of Canada Limited, was elected Chairman and Chief Executive Officer of the Company following the Annual and Special General Meeting on April 27, 1973. He succeeded Gavin W. H. Relly, who had been Chairman and Chief Executive Officer since April, 1970. Mr. Relly returned to Johannesburg to assume new senior responsibilities in the Anglo American Group but remained on the Board of Hudson Bay Mining. Mr. Fraser, a Director of Anglo American Corporation of South Africa Limited, was appointed a Director of Hudson Bay Mining in March, 1971.

H. A. McKenzie was elected on December 14, 1973, to succeed W. A. Morrice as President on January 1, 1974. Mr. Morrice retired at year-end but remained on the Board. He had been President since September, 1971, and has been a Director since April, 1971. He joined the Company in June, 1940, and after holding a number of supervisory positions he was appointed General Manager of the Flin Flon operations in 1964. In January, 1969, he became Executive Vice-President.

The Board is very pleased that Mr. Morrice has agreed



to remain a Director and is grateful that it will continue to receive the benefits of his intimate knowledge of the Company's affairs.

The following appointments became effective on May 7, 1973:

Lawrence W. Ogryzlo, Vice-President—Development. He had been Vice-President—Exploration since April, 1967.

Dr. J. Blair Howkins, Vice-President—Exploration. He had been Chief Geologist since August, 1966.

The following appointments became effective on January 1, 1974:

Joseph S. Warick, Senior Vice-President—Operations, a new executive position. He had been Vice-President—Mining since September, 1971.

John L. Carpenter—Senior Vice-President—Marketing, also a new position. He had been Vice-President, Secretary and General Counsel since September, 1971.

Kenneth S. Dalton, Vice-President. He will continue as Treasurer, the position he has held since June, 1969.

J. Robert G. Sadler, Vice-President—Mining. He had been General Manager, Flin Flon operations, since July, 1972.

James E. Goodman, General Manager, Flin Flon operations. He had been Manager of Metallurgy since August, 1971.

C. Keith Taylor, Q.C., was appointed Vice-President, Secretary and General Counsel, effective February 1, 1974. He established his own law firm in Flin Flon in 1956 and acted as solicitor for Hudson Bay Mining.

## Acquisitions

The Company has completed arrangements, subject to shareholder approval, to purchase a 37.8% equity interest plus a \$5-million 7% convertible debenture of Western Decalta Petroleum Limited, of Calgary, held by Anglo American Corporation of Canada Limited (AMCAN), of Toronto, for a \$30-million combination of shares and cash. If the debenture is converted to common shares, the Company's equity will increase to 44.6%.

Under the terms of the purchase agreement, AMCAN will receive 900,000 shares at \$25 per share plus \$7.5 million in cash. The 900,000 shares will increase AMCAN's equity in Hudson Bay Mining to 34.7% from 28.2%.

Pending ratification of the transaction by shareholders at the Company's 1974 Annual and Special General Meeting to be held in Toronto, the Hudson Bay Mining

shares and the Western Decalta securities are being held in escrow by a Canadian chartered bank.

The Company has acquired an equity interest of approximately 10% in Canadian Merrill Ltd., a Canadian oil and gas company. The Company also has purchased a secured \$4-million 15-year 6½% income debenture convertible to common shares of Canadian Merrill. If the debenture were fully converted, the Company's equity interest would be increased to approximately 30%, which would give it effective control. The Company also has the right of first refusal with respect to additional shares representing approximately 22% of the outstanding shares of Canadian Merrill.

## Exploration

A new copper orebody, named Westarm Mine, was discovered by wholly owned Hudson Bay Exploration and Development Company Limited during diamond-drilling of electro-magnetic anomalies on the west arm of Schist Lake, approximately nine miles south of Flin Flon. Drilling outlined a reserve of 710,000 tons grading 4.63% copper to the 1,400-foot level. The deposit is open at depth. Development of Westarm will be started in 1974.

Exploration was carried out by Hudson Bay Exploration on its own behalf in Manitoba and Saskatchewan and jointly with Anglo American Corporation of Canada Limited (AMCAN) in British Columbia, Yukon, Northwest Territories, Ontario, Quebec and southwestern U.S. Diamond-drilling on all Canadian projects totalled 181,834 feet and tested 367 geophysical anomalies. In addition, 48,963 feet were drilled to investigate further the Stikine Copper Limited property in northwestern British Columbia.

The 1974 exploration budget controlled by Hudson Bay Exploration totals approximately \$5.7 million. This figure includes approximately \$1 million contributed by AMCAN and Tombill Mines Limited under a joint venture agreement and \$750,000 for a proposed drilling program at the Stikine Copper property. Hudson Bay Mining will increase its equity interest in Stikine Copper Limited in return for this expenditure.

**Reserves were increased** at Stikine Copper where Hudson Bay Mining continued a program of exploration and feasibility studies for the second year of a five-year agreement. As provided in the agreement, Hudson Bay Mining increased its interest from 19% to 30%, by taking down Stikine treasury shares, in return for about \$2 million spent on the property during the past two years. At the same time Kennecott Copper Corporation's interest has been reduced from 76% to 65%; Cominco

Ltd.'s interest remains at 5%. Sixty diamond-drill holes were completed in 1973 for a total of 48,963 feet. Of these holes, 53 were drilled on the Central Zone in a search for extensions of known mineralization or to fill in between widely spaced holes drilled previously. Geological ore reserves at year-end for the south part of the Central Zone remain at 59 million tons averaging 1.2% copper (drill-indicated); for the north part of the Central Zone the estimated reserves were increased to 79 million tons averaging 1% copper (drill-inferred). It is planned to continue feasibility studies, field engineering and fill-in drilling in 1974.

**In September**, Hudson Bay Exploration entered into an agreement with Manitoba Mineral Resources Ltd., a Manitoba Government Crown corporation, to search for minerals on a specific permit held by the Crown corporation.

Hudson Bay Exploration is providing 60% of the financing and managing the operation; Manitoba Mineral Resources is providing the remaining 40%.

The program's target area is in the Flin Flon-Snow Lake area, south of Reed Lake, on a 100,000-acre property held by the Crown corporation.

Approximately \$200,000 has been spent by Manitoba Mineral Resources; Hudson Bay Exploration will earn its 60% interest following expenditure of approximately \$300,000. The total cost of the joint exploration program could reach \$1.5 million.

The agreement covers only exploration. Should an economic orebody be discovered, there are provisions for a joint venture agreement for development, mining and processing the ore.

## Base-metal mining

Development of Centennial Mine, the discovery of which was announced in 1970, was started in 1973. Production is scheduled to begin in 1975. Entrance to the mine will be through a decline which had been driven 1,559 feet by year-end. An internal shaft will be sunk to provide access to the orebody and ore will be transported from the shaft to surface on a 2,000-foot conveyor. The orebody contains approximately 1.4 million tons of 2.06% copper and 2.6% zinc to the 1,200-foot level and is still open at depth.

**Stall Lake Mine** was back in full production following a two-year cutback while No. 3 shaft was being sunk. Production at Osborne Lake Mine was reduced in mid-March in order to deepen No. 2 shaft and begin development of two new levels.

**Production** from the Whitehorse Copper joint venture, in which the Company has a 16⅔% interest, was at the rate of approximately 1,960 tons per day grading 1.83% copper and totalled 700,054 tons for the year. Concentrate production amounted to 27,485 tons with an average grade of more than 39% copper. The concentrate was shipped to Noranda, Quebec, for smelting. Underground drilling increased the ore reserves and the additional ore almost matched the tonnage mined during the year. More drilling is planned for 1974. Although total production fell short of budget, an increase is expected in 1974. Development work was hampered by the shortage of skilled labor.

**The Wellgreen mine** of Hudson-Yukon Mining Co., Limited, was shut down permanently in July when all recoverable ore was mined and treated. The lack of continuity and irregularity of the orebody made it necessary to close the mine. Mining and milling operations proceeded at an average rate of 420 tons per calendar day until the ore was depleted. Total mill feed of 76,760 tons grading 1.45% copper and 2.49% nickel produced 15,125 short dry tons of concentrates grading 6.21% copper and 9.56% nickel. Revenue from sales of metal, in concentrate form, after deducting operating costs, plus revenue from sales of assets, totalled \$2,704,000. This additional revenue enabled Hudson Bay Mining, which owns 96% of the outstanding shares of Hudson-Yukon and financed the entire operation, to reduce its loss of \$8,518,000 at year-end 1972 to \$5,814,000 at year-end 1973. All mine equipment worth salvaging was removed from underground. The mill was left with equipment in place. All camp buildings, with the exception of one which is occupied by a full-time watchman, were sold.

**Programs implemented** to improve productivity and efficiency continued to benefit our operations in the Flin Flon-Snow Lake area. The planned maintenance and productivity programs resulted in improved operating methods and reduced manpower requirements in many areas. The management-by-objectives program was broadened to include general foremen and the results have been satisfactory. As a result of the study on materials management, inventories were reduced considerably and a number of improvements were made in purchasing and warehousing.

Overall production of blister copper was increased by 2% although production of Hudson Bay blister decreased by 9%. The decrease in our own blister copper was due to the national railroad strike and a lower-than-expected grade of ore from Anderson Lake Mine. This decrease was more than offset by a 39% increase in purchased concentrate. Total zinc production was increased by 8%, compared with production in 1972.

Of this increase, 3% was from our own ores, and 5% from purchased concentrates.

The trend toward increased overall output of zinc and copper is expected to continue for a few years, provided additional concentrates can be purchased.

#### **Potash mining**

Sylvite of Canada, the Company's potash division, increased profits, sales and production in 1973, the third year of operation. In contrast with 1972, when production had to be trimmed during the last six months, Sylvite started 1973 with a fairly successful spring season and then had to increase production almost to full plant capacity during the last few months of the year. During the month of November, our sales position and production licence permitted the refinery for the first time to operate at full rated capacity. During that month the plant produced more than 100,000 tons of product. Total production in 1973 was 73% of rated capacity, compared with 42% in 1972. Increased demand for product in the U.S. and improved overseas sales negotiated by Canpotex, the export sales organization formed by the Saskatchewan producers, resulted in higher prices. As a result of the greater demand the Saskatchewan Government, which controls production through its prorationing regulations, increased the production licence several times to permit producers to satisfy the increased demand. Provided that weather conditions are favorable for spring planting and the strong demand for potash continues—as we expect it will in view of the ever-increasing food requirements of the world—Sylvite will continue to contribute substantially to the Company's earnings.

**Terra Chemicals International, Inc.**, of Sioux City, Iowa, a fertilizer manufacturer, is the exclusive sales agent in the U.S. for Sylvite of Canada's potash. The Company increased its interest in Terra in 1973 from 15% to 35% through the conversion of some of its preferred shares and the purchase of shares of minority shareholders. If all conversion privileges are exercised the Company's interest will be diluted to 32%. The Company became the major shareholder of Terra during 1973 and its share of Terra's earnings has been reflected in the Company's 1973 earnings statement. Terra experienced a successful year in 1973 and is well placed to benefit from the anticipated increase in demand for fertilizer products during the next few years as a result of the growing world-wide shortages of food. Terra has a firm contract for its supply of natural gas, the basic feedstock for the production of nitrogen fertilizers, thus will not be affected by the shortage of that fuel in the U.S.

#### **Oil and gas**

Francana Oil & Gas Ltd., 54.7%- owned by the Com-

pany, recorded a 14% increase in gross income in 1973. Earnings increased by 28% before equity in earnings of Trend Exploration Limited. During the year, Francana increased its shareholding interest in Trend from 22% to 30%. The purchase of Trend shares was financed by issuing 545,972 treasury shares, of which 408,630 shares were acquired by the Company.

Since the latter part of 1973 the Canadian oil and gas industry has been affected by a series of disturbing developments: higher royalty rates and reserve tax; export controls on crude oil; a price freeze; the passage by the Saskatchewan Legislature of Bill 42, the constitutionality of which is being questioned; the creation of a Petroleum Marketing Board in Alberta, all of which reflect an ever-increasing government interference in the affairs of the petroleum industry. In an economic system actuated by the interplay of supply and demand operating through the price mechanism, rapid price increases not only indicate an imbalance but also provide the means of correcting it by providing the funds to increase production. Excessive royalties and taxes divert the cash flow necessary to finance needed expansion and tend to prolong the period of shortage. With only 13 years of conventional reserves of crude oil and net cash flow, on the basis of current oil prices, inadequate to meet the costs of discovering replacement reserves, let alone increasing them, Canada ought to be conscious of the long-term effects of present policy. The direct effect of this policy is particularly evident in the case of our associated oil and gas companies which, like so many Canadian independents, are not paying dividends and are ploughing all their cash flow back into exploration and increasing reserves.

#### **Manufacturing**

A \$4-million plant being built near Toronto to manufacture various grades of zinc oxide is scheduled to begin operations in mid-1974. Although owned by Hudson Bay Diecastings Limited, the new plant will be managed and operated by Zochem Limited; both companies are wholly owned subsidiaries of Hudson Bay Mining. Sales will be handled by Zochem. As production at the new plant increases gradually from 60 tons daily to its full capacity of 100 tons per day, operations at Zochem's 40-year-old zinc oxide plant in Montreal will be phased out and shutdown is expected in the late 1974. The new plant will provide additional capacity for the manufacture of photoconductive-grade oxide which is expected to account for more than 50% of Zochem's oxide sales in 1974. Hudson Bay Diecastings will continue to manufacture only zinc-base diecastings for the automotive and appliance industries.

### Labor relations

A three-year collective bargaining agreement covering all nine unions in the Flin Flon-Snow Lake area became effective on October 1. During the two previous contract negotiations, unionized employees had bargained with the Company in two groups; however, in 1973 collective bargaining was carried out successfully by one group, the Joint Bargaining Committee 1973.

The total cost of the increase in wages and benefits for Flin Flon-Snow Lake employees for the three-year period will be approximately \$20 million.

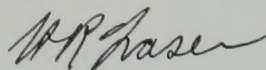
Increased emphasis on industrial relations through labor-management meetings, supervisory training and employee-training programs has resulted in improved relations between the Company and the employees. Employee training will receive special emphasis in 1974 in an effort to maintain a stable, competent work force.

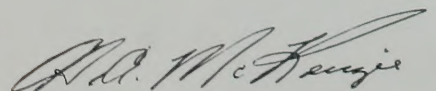
### Environment

Considerable progress was made on environmental matters during the year. An environmental-control department was established under the direction of a chief environmental engineer. The department has undertaken a wide range of projects ranging from revegetation of tailing areas to treatment of mine water and general reduction of process emissions.

The levels of plant effluents are decreasing and a definite reversal of the degradation of the lakes in the area has taken place. Tailings revegetation has proven feasible and large-scale planting could become a reality in the future. The concrete outer shell of the 825-foot stack was completed during the year and the steel inner lining and flue system will be completed in 1974. Systems have been established for monitoring the operation of the new stack. A total of \$2.6 million was spent on environmental-control projects during 1973. Good working relationships have been established with the various levels of government involved in environmental policy and control. A public relations program aimed at achieving a proper understanding of the Company's problems among the citizens of the Flin Flon area continues to receive top priority.

On behalf of the Board of Directors,

 Chairman

  
President

March 15, 1974

New 825-foot stack for smelter and refinery at Flin Flon is scheduled to be in operation in late 1974.



**Hudson Bay Mining and Smelting Co., Limited  
and subsidiary companies**

**Consolidated statement of financial position**  
as at December 31, 1973

The accompanying notes are an integral part of  
the financial statements.

	1973	1972
<b>Current assets</b>		
Cash	\$ 435,051	\$ 301,681
Short-term securities	32,601,200	20,895,400
Accounts receivable	32,835,790	17,087,999
Inventories (Note 3)	35,057,638	25,398,245
Materials and supplies—at cost	6,393,039	6,309,262
Total current assets	107,322,718	69,992,587
Deduct:		
<b>Current liabilities</b>		
Accounts payable and accrued liabilities	30,387,599	18,574,020
Income and other taxes payable	7,045,391	1,213,073
Dividend payable	8,947,290	1,808,286
Current portion of long-term debt	576,000	576,000
Total current liabilities	46,956,280	22,171,379
<b>Working capital</b>	60,366,438	47,821,208
Add:		
<b>Marketable securities—at cost</b> (market value 1973—\$2,563,281; 1972—\$1,955,469)	2,541,190	2,541,190
<b>Investment in joint venture—at equity value</b>	2,026,451	950,000
<b>Investments in other companies (Note 4)</b>	20,818,244	11,492,064
<b>Property, plant and equipment (Note 5)</b>	96,582,987	89,350,948
<b>Other assets</b>		
Unamortized mine development expenditures (Note 6)	35,801,288	37,717,772
Deposit on investment in Western Decalta Petroleum Limited (Note 7)	7,500,000	—
Sundry assets and deferred charges—at cost (Note 7)	6,259,090	4,386,912
	49,560,378	42,104,684
<b>Capital employed</b>	231,895,688	194,260,094
Deduct:		
<b>Long-term debt (Note 8)</b>	27,778,000	27,778,000
<b>Deferred income taxes (Note 9)</b>	22,544,000	16,687,000
<b>Minority interest in subsidiaries</b>	8,289,107	5,716,477
	58,611,107	50,181,477
<b>Shareholders' investment</b>	\$ 173,284,581	\$ 144,078,617
<b>Investment evidenced by</b>		
Capital stock (Notes 7 and 10)		
Authorized—12,000,000 shares of no par value		
Issued and fully paid—9,041,433 shares	\$ 45,936,356	\$ 45,936,356
Retained earnings (Note 7)	127,348,225	98,142,261
Total shareholders' investment	\$ 173,284,581	\$ 144,078,617
<b>Approved by the Board of Directors</b>		
Director: H. R. Fraser		
Director: H. A. McKenzie		

**Hudson Bay Mining and Smelting Co., Limited  
and subsidiary companies**

**Consolidated statement of earnings**  
for the year ended December 31, 1973

The accompanying notes are an integral part of  
the financial statements.

	1973	1972
<b>Revenue</b>		
Sales of product	\$ 180,998,258	\$ 107,843,689
Less freight, refining and selling expenses	14,780,855	11,967,251
	166,217,403	95,876,438
Other income (Note 11)	6,920,632	2,783,835
	173,138,035	98,660,273
<b>Costs and expenses</b>		
Production costs (Note 12)	88,697,052	63,485,080
Amortization of mine development expenditures	6,239,110	6,882,065
Depreciation and depletion	7,106,652	6,557,975
Exploration expenses	2,918,867	2,759,016
General administrative expenses	3,099,622	2,292,265
Interest and other long-term debt expense	2,562,886	2,535,224
	110,624,189	84,511,625
<b>Earnings before income and provincial mining taxes</b>	62,513,846	14,148,648
<b>Income and provincial mining taxes</b>		
Income taxes (Note 9)	9,094,000	927,000
Provincial mining taxes	6,433,329	1,572,566
	15,527,329	2,499,566
<b>Earnings from operations</b>	46,986,517	11,649,082
<b>Other deductions</b>		
Provision for future write-offs of investments	1,850,000	—
Minority interest in earnings of subsidiaries	551,687	269,770
	2,401,687	269,770
<b>Earnings before extraordinary item</b>	44,584,830	11,379,312
<b>Recovery of part of prior year's loss on investment in Wellgreen Mine (Note 13)</b>	2,704,000	—
<b>Estimated loss on investment in Wellgreen Mine</b> (less applicable income tax reduction \$4,847,000)	—	8,518,000
<b>Net earnings for the year (Note 7)</b>	\$ 47,288,830	\$ 2,861,312
<b>Earnings per share (Note 7)</b>		
Before extraordinary item	\$ 4.93	\$ 1.26
After extraordinary item	\$ 5.23	\$ 0.32
<b>Consolidated statement of retained earnings</b>		
<b>Retained earnings at beginning of the year</b>	\$ 98,142,261	\$ 102,514,095
<b>Net earnings for the year</b>	47,288,830	2,861,312
	145,431,091	105,375,407
<b>Dividends (Note 7)</b>		
\$2.00 per share (1972—\$0.80)	18,082,866	7,233,146
<b>Retained earnings at end of the year</b>	\$ 127,348,225	\$ 98,142,261

**Hudson Bay Mining and Smelting Co., Limited  
and subsidiary companies**

**Consolidated statement of source  
and application of funds**

for the year ended December 31, 1973

The accompanying notes are an integral part of  
the financial statements.

	1973	1972
<b>Source of funds</b>		
Operations:		
Earnings from operations	\$ 46,986,517	\$ 11,649,082
Equity in earnings of associated companies and joint venture	(2,637,146)	—
Depreciation, depletion and amortization of mine development expenditures	13,345,762	13,440,040
Deferred income taxes	5,857,000	1,547,000
	63,552,133	26,636,122
Contribution from Wellgreen operations	2,704,000	1,062,972
	66,256,133	27,699,094
Proceeds from long-term debt	576,000	—
Issue of shares by subsidiary company to minority interest	1,260,801	—
Sale of investments	1,844,209	1,571,580
Issue of shares under options	—	10,830
	69,937,143	29,281,504
<b>Application of funds</b>		
Dividends	18,082,866	7,233,146
Investments in other companies	11,136,614	3,159,835
Additions to property, plant and equipment	13,854,028	6,232,573
Mine development expenditures	4,322,626	6,049,893
Reduction of long-term debt	576,000	576,000
Decrease in minority interest	47,600	149,968
Increase (decrease) in sundry assets	702,179	(1,154,608)
Deposit on investment in Western Decalta Petroleum Limited (Note 7)	7,500,000	—
Dividends held in escrow (Note 7)	1,170,000	—
	57,391,913	22,246,807
<b>Increase in working capital</b>	12,545,230	7,034,697
<b>Working capital at beginning of the year</b>	47,821,208	40,786,511
<b>Working capital at end of the year</b>	\$ 60,366,438	\$ 47,821,208

**Auditors' report**

To the Shareholders of  
Hudson Bay Mining and Smelting Co., Limited

We have examined the consolidated statement of financial position of Hudson Bay Mining and Smelting Co., Limited and subsidiary companies as at December 31, 1973, and the consolidated statements of earnings, retained earnings and source and application of funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We did not examine the financial statements of

Terra Chemicals International, Inc. and the joint venture which are reflected in the accompanying financial statements using the equity method of accounting and the earnings from which comprise approximately 5% of the consolidated net earnings; nor did we examine the financial statements of Western Decalta Petroleum Limited, the proposed acquisition of which is explained in Note 7 to the financial statements. These financial statements, which we did not examine, were reported upon by other auditors and our opinion, insofar as it relates to the amounts included for such companies, is based solely upon the reports of the other auditors.

In our opinion, based upon our examination and the reports of other auditors, these consolidated financial

statements present fairly the financial position of the companies as at December 31, 1973, and the results of their operations and the source and application of their funds for the year then ended, in accordance with generally accepted accounting principles applied (except for the change, with which we concur, from the cost to the equity method of accounting for investments in associated companies as explained in Note 4 to the financial statements) on a basis consistent with that of the preceding year.

Deloitte, Haskins & Sells  
Chartered Accountants

Toronto, Canada, February 18, 1974.



# Hudson Bay Mining and Smelting Co., Limited and subsidiary companies

## Notes to the consolidated financial statements December 31, 1973

### 1. Principles of consolidation

The consolidated financial statements include the accounts of Hudson Bay Mining and Smelting Co., Limited and all companies more than 50%-owned. In addition, the Company follows the equity method of accounting for its interest in certain investments as more fully explained in Note 4.

### 2. Foreign exchange

Foreign currencies have been translated to Canadian dollars as follows: revenue and expenditures, non-current assets and liabilities at rates in effect at dates of transactions; current assets and liabilities at rates in effect at the end of the year.

### 3. Inventories

Inventories comprise the following:

	1973	1972
Metals, at estimated sales value	\$30,189,438	\$17,807,215
Metals in process, at cost	3,429,076	2,027,774
Manufactured and other products (finished, in process and raw materials), at cost or net realizable value, whichever is the lower	1,439,124	5,563,256
	<u>\$35,057,638</u>	<u>\$25,398,245</u>

### 4. Investments in other companies

	1973	1972
Associated companies—see below	\$14,699,365	\$ 9,061,126
Other—at cost		
Quoted (market value 1973 \$666,375; 1972 \$546,500)	1,375,655	1,479,149
Unquoted	10,041,386	8,356,684
	<u>11,417,041</u>	<u>9,835,833</u>
Less provision for future write-offs	5,298,162	7,404,895
	<u>6,118,879</u>	<u>2,430,938</u>
	<u>\$20,818,244</u>	<u>\$11,492,064</u>

In prior years, investments in all companies other than subsidiaries were accounted for on the cost basis, and any diminution in the underlying value of investments

of this nature was recognized by making a charge to earnings as a provision for future write-offs.

Commencing January 1, 1973, the Company and Francana Oil & Gas Ltd. adopted the equity method of accounting for investments in associated companies in which they own from 20% to 50% of the common shares. Under this method, the Company records as earnings its share of the earnings or losses of (rather than dividends received from) these companies. This change has resulted in increased net earnings of \$283,700 (\$.03 per share) for 1973.

The investment in associated companies at December 31, 1973 comprises the following:

	% of Common Share Ownership	Underlying Equity in Net Assets
Terra Chemicals International, Inc.	35%	\$ 6,050,000
Trend Exploration Limited	30%	\$ 1,871,000

The excess of \$6,801,500 of the value of the investments over the underlying equity in the net assets at the date of acquisition is included in the investments in associated companies and is being written off against earnings. The amounts previously recognized as a decline in value of these investments have been charged to the provision for future write-offs as of January 1, 1973. The share of earnings of Trend Exploration Limited reflects the earnings of that company for the year ended June 30, 1973, that company's fiscal year-end.

### 5. Property, plant and equipment

(a) The following is a summary of property, plant and equipment at cost by major category:

	1973	1972
Mineral properties	\$19,322,718	\$19,410,140
Base-metal plant and equipment	87,847,246	77,839,926
Industrial mineral plant and equipment	45,904,354	45,402,181
Oil and gas properties, plant and equipment	26,753,703	24,138,188
Other property, plant and equipment	8,595,862	8,040,694
	<u>188,423,883</u>	<u>174,831,129</u>
Less accumulated depreciation and depletion	91,840,896	85,480,181
	<u>\$ 96,582,987</u>	<u>\$ 89,350,948</u>

Mineral properties include all exploration costs with respect to mines operating or in the development stage. Oil and gas properties are accounted for on the

full cost basis whereby all costs relating to the exploration for and development of oil and gas resources are capitalized whether productive or unproductive.

(b) Depreciation of base-metal plant and equipment and depletion of mineral and oil and gas properties are charged to operations by the unit-of-production method based on estimated recoverable reserves. Depreciation on industrial mineral and other plant and equipment is charged to operations on a straight-line basis over the estimated useful lives of the plant and equipment.

### 6. Amortization of mine development expenditures

Mine development expenditures are charged to operations on a unit-of-production basis based on estimated recoverable reserves.

### 7. Deposit on investment in Western Decalta Petroleum Limited

On August 21, 1973, the Company undertook to acquire a 37.8% equity interest, plus a \$5,000,000 7% debenture due September 30, 1985 (convertible into common shares until October 1, 1978, at the rate of 200 shares for each \$1,000 of principal) in Western Decalta Petroleum Limited for 900,000 shares issued as fully paid and valued at \$25 per share, and \$7,500,000 in cash. In compliance with the requirements of the New York Stock Exchange, the transaction will be submitted to the shareholders of the Company for ratification at the next annual meeting, to be held in 1974. Pending shareholder ratification, the 900,000 shares of the Company were issued and deposited in escrow with a Canadian chartered bank, together with the securities of Western Decalta Petroleum Limited.

Because the agreement requires shareholder ratification, the acquisition has not been reflected in the accounts. The following table indicates the changes which will be made to the Company's earnings for 1973, on a retroactive basis, if the transaction is ratified and completed:

Reported earnings	\$47,288,830
Equity in Western Decalta earnings since date of acquisition (less amortization of the excess of cost of the investment over the underlying equity)	5,000
Adjusted earnings	<u>\$47,293,830</u>
Adjusted earnings per share:	
Before extraordinary item	\$ 4.77
After extraordinary item	<u>\$ 5.06</u>

The adjusted earnings per share have been calculated based on the weighted average number of shares which would have been outstanding during 1973.

continued

An amount of \$1,170,000 representing the 1973 third and fourth quarter dividends of \$1.30 per share) is being held in escrow and is included in deferred charges. If the acquisition is ratified by the shareholders, this amount will be charged against retained earnings.

The underlying equity value of the investment amounts to \$13,500,000 at the date of acquisition. The excess of \$16,500,000 of the cost of the investment over the underlying equity in net assets at the date of acquisition, will be included in the investment account and written off against future earnings.

### 8. Long-term debt

Long-term debt comprises the following:

	1973	1972
9% unsecured debentures maturing June 15, 1991	\$25,000,000	\$25,000,000
Bank production loans of subsidiary company, Francana Oil & Gas Ltd.	3,354,000	3,354,000
	28,354,000	28,354,000
Less amount included in current liabilities	576,000	576,000
	\$27,778,000	\$27,778,000

(a) Under the trust indenture covering the 9% unsecured debentures, sinking-fund payments sufficient to retire \$800,000 of principal amount each year from 1977 to 1990 inclusive are required. The Company has the option to redeem the debentures at prices ranging downward from 107.90% currently to 100% in 1989 and thereafter. Debentures redeemed through the operations of the sinking-fund are callable at par.

(b) The production loans are repayable in monthly instalments of \$48,000, plus interest at rates approximating prime bank rate. The loans are secured by an assignment of the subsidiary's interest in certain producing properties.

### 9. Income taxes

Deferred income taxes represent tax reductions for expenditures on mine development, mineral and oil properties, cost of participation in certain mining companies, and depreciation deducted in the determination of taxable income but not charged to earnings.

Certain mines which came into production in the years 1970-1973 and which have been treated as tax exempt in calculating income tax expenses are awaiting exempt-status determination by the Department of National Revenue. The delay in granting the exempt status is common to the Canadian mining industry, and appears to be related in part to the outcome of

litigation presented before the Courts with respect to another Canadian mining company.

### 10. Share option plan

Under the Company's Share Option Plans for Full-Time Officers and Key employees, 368,000 unissued shares were reserved for granting of options at prices not less than 95% of the market value (full market value in the case of United States citizens) on the day the option is granted.

No options were granted or exercised during 1973, and options on 5,275 shares terminated.

As of December 31, 1973, 211,285 shares were available for future grants and 81,115 shares were subject to outstanding options as follows:

Date of Grant	Option Price Per Share	Shares for Officers	Total Shares
January 23, 1970	\$27.01	750	975
December 14, 1972	\$19.65	15,940	80,140

The options granted in 1970 are exercisable until January 22, 1975, and the options granted in 1972 are exercisable from January 23, 1975, to December 13, 1977.

### 11. Other income

This amount comprises:

	1973	1972
Equity in earnings of associated companies	\$ 1,560,695	\$ —
Share of earnings of joint venture	1,076,451	—
Interest income	2,415,373	1,230,480
Gain on sale of marketable securities	481,248	—
Sales of power, revenue from custom treatment of concentrates and miscellaneous income	1,386,865	1,553,355
	\$ 6,920,632	\$ 2,783,835

### 12. Production costs

Production costs include the cost of outside purchases of concentrates for processing in the Company's metallurgical plants. These purchases amounted to \$33,925,000 in 1973 (1972—\$10,375,000).

### 13. Extraordinary item

The Wellgreen Mine in the Yukon which came into production in May, 1972, was shut down permanently on July 6, 1973. Higher-than-anticipated revenues resulted in the recovery of a portion of the loss.

### 14. Pension fund

During the year there was a major revision to the pension plan for Flin Flon-Snow Lake employees whereby the basic pension benefits were substantially increased. As a result, the unfunded past service pension liability at December 31, 1973, approximates \$12,000,000 (1972—\$5,000,000) and is being funded over the next 15 years as recommended by the Company's actuarial consultants.

The value of the assets of the pension plan are, in the opinion of the Company's actuarial consultants, approximately equal to the vested benefits.

### 15. Subsequent event

On January 9, 1974, the Company agreed to acquire 200,000 common shares representing 9.9% of the outstanding common shares of Canadian Merrill Ltd. from the management group of that Company for \$1,100,000 cash, and to invest a further \$4,000,000 in the form of a 6½% income debenture, convertible into common shares at \$6.00 per share to February 28, 1979, and \$7.00 per share thereafter to February 28, 1984.

### 16. Litigation

An action has been brought alleging infringement by the Company with respect to certain patents relating to the processing of potash. In the opinion of the Company and its counsel the patents are not infringed, and accordingly the Company has a good defence to the action on the merits.

### 17. Remuneration of directors and officers

The Company has 12 directors and 12 officers; two of the officers are also directors. The aggregate remuneration paid to the directors and officers, as such, was as follows:

	1973	1972
Directors	\$ 53,600	\$ 27,400
Officers	\$ 686,920	\$ 578,194

# Ten-year record 1964-1973

## Ore milled and ore reserves

		milled (tons)	reserves (tons)	copper (%)	zinc (%)	gold (oz./ton)	silver (oz./ton)
1964		1,585,000	16,627,400	3.0	4.3	0.05	0.8
1965		1,640,000	16,842,000	3.0	4.5	0.05	0.8
1966		1,690,000	16,765,300	2.9	4.4	0.04	0.7
1967		1,588,000	16,884,600	3.0	4.1	0.04	0.7
1968		1,610,000	17,612,300	3.0	3.8	0.04	0.6
1969		1,702,000	18,048,600	3.0	3.5	0.04	0.6
1970		1,709,000	19,115,100	2.9	3.3	0.04	0.6
1971		1,084,000	18,344,900	2.9	3.3	0.04	0.6
1972		1,847,900	17,283,600	2.9	3.3	0.04	0.6
1973		1,815,027	18,000,600	3.1	2.9	0.03	0.5

## Production

		copper (tons)	zinc (tons)	cadmium (lbs.)	gold (ozs.)	silver (ozs.)	selenium (lbs.)
1964		40,417	71,012	329,552	80,174	1,179,888	70,335
1965		39,726	71,435	368,208	82,189	1,216,359	62,061
1966		38,268	73,331	352,405	71,202	1,022,009	76,602
1967		38,403	72,061	352,042	70,615	1,040,098	63,316
1968		41,660	80,308	330,872	59,602	970,674	86,346
1969		42,302	79,711	333,959	52,410	818,209	91,866
1970		42,178	78,622	338,343	55,188	865,141	89,808
1971		26,988	41,158	145,857	27,635	504,021	61,872
1972		54,076	77,023	386,768	51,990	1,014,041	65,828
1973		59,632	82,882	306,570	62,892	1,293,059	129,625

## Earnings and dividends

		operating revenue	interest, other income	net earnings	earnings per share	dividends	dividends per share
1964		\$56,377,535	\$1,435,381	\$13,095,323	\$1.58	\$ 9,652,905	\$1.16 <sup>2</sup> / <sub>3</sub>
1965		61,702,298	1,486,058	15,990,045	1.93	10,342,399	1.25
1966		69,112,153	1,454,342	19,116,388	2.31	11,169,791	1.35
1967		72,351,946	1,612,232	16,718,617	1.98	10,999,845	1.30
1968		79,699,926	1,965,946	21,134,880	2.47	11,551,067	1.33 <sup>1</sup> / <sub>3</sub>
1969		95,674,349	2,238,324	29,698,514	3.29	13,252,815	1.46 <sup>2</sup> / <sub>3</sub>
1970		87,160,970	1,765,199	19,563,052	2.16	10,698,234	1.18 <sup>1</sup> / <sub>3</sub>
1971		60,606,500	2,148,263	3,008,977	0.33	4,520,417	0.50
1972		107,843,689	2,783,835	2,861,312	0.32	7,233,146	0.80
1973		180,998,258	6,920,632	47,288,830	5.23	18,082,866	2.00

# metals



## Review of operations

### Metals division

#### Production

During 1973 production of metals was as follows: re-refined copper, 119,263,346 lbs.; slab zinc, 165,764,393 lbs.; cadmium, 306,570 lbs.; selenium, 129,625 lbs.; gold, 62,892 ozs.; and silver, 1,293,059 ozs. In addition, 96 tons of lead concentrates containing 84 ozs. of gold, 2,691 ozs. of silver, and 133,726 lbs. of lead were produced and sold.

#### Producing mines

All nine mines operated by the Company in the Flin Flon-Snow Lake area of northern Manitoba produced continuously during the year; however, two mines were operated at a reduced rate while deeper ore zones were being developed.

Ore production totalled 1,810,800 tons, 35,000 tons less than the tonnage mined in 1972, due to the national rail strike.

Details of this production, with average assays, are as follows:

mine	tons	average assays				
		Au oz./ton	Ag oz./ton	Cu %	Zn %	Pb %
Flin Flon	593,200	0.07	1.1	2.1	3.1	—
Anderson	298,400	0.01	0.3	2.9	0.3	—
Chisel	182,400	0.04	1.0	0.6	9.4	0.4
Osborne	59,800	0.01	0.2	3.2	2.4	—
Dickstone	179,000	0.02	0.3	2.6	2.7	—
Schist	93,300	0.03	0.7	3.5	4.1	—
Stall	172,000	0.06	0.5	4.3	0.8	—
White	133,000	0.02	0.9	2.0	4.2	—
Ghost	99,700	0.03	1.2	1.9	11.7	0.3

Pillars and remnants continued to be the main sources of ore in the Flin Flon Mine.

Production at the Schist Lake Mine was below expectations because of difficult ground conditions on the lower levels.

White Lake Mine produced as planned and an additional 49,000 tons of ore were found while mining.

At the Dickstone Mine, further development required by the revised mining method was continued in addition

*Drilling in a stope in Chisel Lake Mine, one of nine operating mines in the Flin Flon-Snow Lake area.*

to normal production. Exploration drilling below the bottom level has added 147,000 tons of ore, increasing the tonnage below the 1,150-foot level to 299,000 tons.

Ghost Lake Mine production was as planned and the zinc grade was 25% higher than in 1972.

Tonnage produced at the Chisel Lake Mine was lower but the grade was maintained. Methods for mining a large block of ore immediately below the lake were investigated and further tests will be carried out in 1974.

At the Stall Lake Mine, development of the lower ore zones serviced by the internal shaft was continued; production was gradually increased and was near normal at year-end.

In mid-March production was curtailed at the Osborne Lake Mine to develop the ore zone below the 2,100-foot level. The No. 2 shaft was sunk an additional 550 feet. Installation of shaft equipment was completed and the development of two new levels was started.

At the Anderson Lake Mine, the surface-fill equipment was installed and the change in the mining method—from open stope to cut-and-fill—progressed as planned. Production was lower during the changeover.

As forecast in the 1972 Annual Report, the Wellgreen Mine in the Yukon was shut down permanently in July after the recoverable ore underground and the stock-piled tonnage had been processed in the concentrator. Some mining equipment was sold to the Company and transferred to Flin Flon and all the camp buildings, except one to house a full-time watchman, were sold.

#### **Mines under development**

The development of Centennial Mine was started in mid-July. The surface buildings have been built and the access decline had been driven 1,559 feet at year-end.

A road and a transmission line will be built in 1974 to service a new discovery at the west arm of Schist Lake, approximately nine miles south of Flin Flon. This property has been named Westarm Mine.

#### **Exploration**

The Flin Flon-based Central division of Hudson Bay Exploration and Development Company Limited, a wholly owned subsidiary of the Company, discovered a copper orebody during diamond drilling of an electro-

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*Stacking refined slab zinc in the warehouse at the metallurgical complex at Flin Flon.*





magnetic anomaly on the west arm of Schist Lake in Manitoba, approximately nine miles south of Flin Flon. Additional details of this discovery are given in the Report of the Directors.

Hudson Bay Air Transport Limited, also a wholly owned subsidiary of the Company, flew 2,106 hours, or 245,735 miles, largely in support of exploration programs.

#### Concentrator

Both new rod mills that replaced the tertiary crushing rolls began operating during the year, one in July, the other one in November.

The concentrator treated 1,815,027 tons of ore in 1973, representing 6,806 tons per operating day.

Ore treated and the average assays;

	1973	1972
tons of ore treated	1,815,027	1,847,900
average tons per calendar day	4,973	5,049
Au—oz. per ton	0.04	0.03
Ag—oz. per ton	0.7	0.6
Cu—%	2.4	2.7
Zn—%	3.6	3.3
Pb—%	0.3	0.2

The following concentrates were produced from the ore treated:

concentrates	tons	assays				
		Au oz./ton	Ag oz./ton	Cu %	Zn %	Pb %
copper	251,058	0.18	3.4	16.5	4.5	0.4
zinc	90,796	0.05	1.4	0.6	48.8	0.6
lead	96	0.25	30.8	0.3	2.1	67.7

Flotation tailings produced during the year totalled 1,472,582 tons. Of this amount, 792,557 tons were treated for partial recovery of gold and silver in the cyanide section.

There were 82,488 tons used for backfill at the Flin Flon and Anderson Lake mines and the balance was stockpiled.

The total tonnage and approximate assays of the tailings stockpiled to date are as follows:

tons	assays					
	Au oz./ton	Ag oz./ton	Cu %	Zn %	S %	Fe %
53,421,194	0.02	0.3	0.2	0.7	23.1	26.2

*The hydroelectric generating plant at Island Falls is operated by remote control from centre in Flin Flon.*

**Zinc refinery**

A record 165,764,393 lbs. of zinc were produced in 1973. This was 7.9% more per calendar year than was produced in 1972. The Special High Grade brand for the diecasting industry was 99.9975% pure zinc.

Cadmium produced totalled 306,570 lbs., or 843 lbs. per calendar day, compared with 1,057 lbs. per day in 1972.

The following materials were treated:

	tons	assays			
		Au oz./ton	Ag oz./ton	Zn %	Cu %
HBM&S concentrates	90,244	0.046	1.38	48.8	0.62
purchased concentrates	52,976	—	0.76	53.2	0.64
oxide	43,822	0.009	0.56	60.6	0.76

Production of sulphide residue totalled 52,798 tons, of which 52,186 tons were delivered to the smelter. The remainder was stockpiled. Oxide residue produced totalled 12,839 tons, of which 9,033 tons were stockpiled; 3,806 tons were delivered to the copper thickener in the mill.

**Copper smelter**

The tonnage and assay of the materials treated in the smelter are shown below:

	tons	assays			
		Au oz./ton	Ag oz./ton	Cu %	Zn %
HBM&S concentrates	252,050	0.183	3.365	16.538	4.491
residues, etc.	64,296	0.125	3.235	2.939	23.973
custom concentrates	4,463	—	1.511	30.312	0.130
purchased concentrates	78,460	0.138	3.811	24.434	3.743

The tonnage and metal content of blister copper produced for the Company's account and for shipment to the refinery were as follows:

	tons	Au oz.	Ag oz.	Cu lbs.	Se lbs.
Hudson Bay feed	41,388	53,940	997,086	81,889,896	133,704
purchased concentrate	19,168	10,728	327,267	37,925,746	—
total Hudson Bay blister	60,556	64,668	1,324,353	119,815,642	133,704



*Two-drill jumbo moving into position at the bottom of the access decline at Ghost Lake Mine.*



Zinc oxide recovered from the smelter-stack dust totalled 10,953 tons, assaying 27.9% zinc, 3.1% copper, 1.3% cadmium, and 14.1% lead. This material was sent to the zinc refinery for treatment.

Slag treated in the fuming furnaces totalled 358,220 tons, yielding 32,869 tons of oxide. This oxide, containing 47,008,223 lbs. of zinc, was delivered to the zinc refinery for processing into slab zinc. A new concentrate unloading facility was completed early in the year.

Construction of an anode-casting plant was started in early 1973 and it is expected to be operating early in 1974.

#### **Research**

Data required for the engineering design of the new flue system, Cottrell unit and stack was accumulated.

Beneficiation studies were conducted on ore from the Centennial Mine, Vamp Lake, Kobar and Whitehorse Copper Mines Ltd. Two-stage cycloning of mill tailings for mine backfill was also investigated.

Cyclone tests of zinc solutions and of zinc dust purification solutions were conducted and plant-scale testing is planned for 1974.

The use of atomic absorption analysis was expanded to include selenium and tellurium in Hudson Bay blister copper.

#### **Power supply**

Churchill River Power Company Limited, a wholly owned subsidiary, and the Company's thermal plant at Flin Flon generated 723,794,100 kilowatt hours in 1973, a decrease of 19,836,400 kilowatt hours from the 1972 total. The decrease is due to Manitoba Hydro's purchase of Northern Manitoba Power Company Limited, also a wholly owned subsidiary of the Company.

The purchase included the physical properties and assets of Northern Manitoba Power and that portion of subsidiary Northern Power Limited within the city limits of Flin Flon.

Precipitation in the watershed area was sufficient to maintain the elevation of Reindeer Lake for the winter draw-down period.

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*Welder repairing huge bucket that is used to transfer molten blister copper from converter to casting wheel.*

## Major Projects

The status of the major projects started in 1973 is as follows:

1. Anode casting: to be completed early in 1974.
2. Reverberatory Boilers: the first boiler is expected to be in operation in October, 1974; the second one in the spring of 1975.
3. High stack: the 820-foot outer concrete shell was completed during the year. The steel liner and connecting flue will be installed in 1974.
4. Smelter flue system: work was started on revising the flue system from the copper smelter and the zinc refinery to the new stack. Also included is a new Cottrell system on the copper roaster.

## Personnel and administration

The Flin Flon workforce on January 1, 1973, totalled 2,531 employees; on January 1, 1974, the total was 2,442. This figure is slightly below the Company's requirements; the shortage is mainly in underground personnel. A sustained program to recruit, train and maintain a competent workforce is underway. Several new training programs were initiated during the year and employee training will be increased in 1974.

To date, 1,260 employees, past and present, have reached the 25-year service mark, 80 having qualified in 1973. At year-end, 630 employees with 25 or more years of service were on the payroll.

Several new senior staff positions were created in 1973: chief plant engineer, chief environmental engineer, industrial doctor and materials superintendent.

The system of planned maintenance is operating smoothly and has resulted in a considerable increase in operational efficiency. Although the input of consultants to the industrial engineering program has been terminated, the program is being continued by Company personnel. The materials management study has resulted in an inventory reduction of \$500,000.

*Steel framework of new casting plant that will produce copper anodes instead of blister cakes.*



# potash



Review of operations:  
continued

## Sylvite of Canada

Sales of potash totalled 961,162 tons in 1973. Demand for product was split almost evenly between spring and fall fertilizer seasons: 454,855 tons in the spring and 506,307 tons in the fall. Following a very short selling season in North America in the spring due to excessive rainfall, demand strengthened sharply in the fall as farmers took advantage of ideal weather conditions for fertilizer application. The increased demand was the direct result of the agricultural industry's continuing efforts to increase the world's food supply. Overseas demand was extremely high during the spring and even stronger in the fall.



Sylvite shared in overseas sales as a member of Canpotex, the export marketing agency formed by producers in Saskatchewan. New customers in 1973 were China, India, Peru, Mexico, New Zealand, Europe and Cuba. As in 1972, product was shipped to Australia, Brazil, Korea, Japan, Malaysia, the Philippines and Taiwan.

Canadian sales were handled by Sylvite's own sales staff; sales in the U.S. were handled in co-operation with Terra Chemicals International, Inc., of Sioux City, Iowa, in which Hudson Bay Mining has a 34.6% equity interest.

In order to meet sales commitments, the refinery operated at 73% of its rated capacity of 1.2 million tons annually, compared with 42% in 1972, and produced 873,746 tons of muriate of potash.

In November alone, more than 100,000 tons of potash were produced, marking the first time since the beginning of operations in March, 1971, that the refinery was permitted to demonstrate its capability to operate at rated capacity.

Product shipped in 1973 rose to 896,689 tons, with a record 125,506 tons moved to customers in March. Hopper cars were provided by both of Canada's national railways, CP Rail and Canadian National. The CN service started in February.

*Potash ore being transferred from extensible conveyor behind the mining machine to a fixed conveyor.*

Capital expenditures during 1973 totalled \$478,000; total capital expenditures to year-end 1973 were \$66,823,958. It is estimated that \$1,961,000 will be spent during 1974 on various projects. Two major projects are planned for 1974: an addition to the product storage building at the mine site and an extension to the main-line conveyor underground. In addition many low-cost modifications will be made to improve overall efficiency.

At year-end there were 217 employees on the payroll, 31 more than a year ago. The additional personnel were needed in order to switch from a five-day to a seven-day operating schedule. Familiarization training sessions for employees and advanced classes for supervisory personnel were continued.

The emphasis on safety training continues to produce encouraging results. During the year there were only four lost-time accidents, 23 injuries requiring medical aid and 78 minor injuries needing only first-aid treatment. Regular meetings of the occupational health and safety committee were held throughout the year. The Saskatchewan Provincial Mine Rescue Competition was held underground for the first time, on June 2, with Sylvite of Canada as the host mine. Sylvite's mine-rescue team won the competition and the Safeco Drager Trophy. Training in mine-rescue techniques was continued, as were first-aid training classes.

Public interest in Sylvite remained high during the year and by year-end 3,006 persons had toured the facilities. More than 8,000 persons have toured the mine and refinery since public tours were started during the summer of 1971.



*Gas-fired rotating dryer in Sylvite of Canada's refinery is 60 feet long and 10 feet in diameter.*

# oil/gas



Review of operations:  
continued

## Subsidiary and affiliated companies

### Francana Oil & Gas Ltd.

Sales of crude oil during 1973 totalled 1,143,000 barrels, compared with 1,204,000 barrels in 1972. The 5% decrease is partly the result of the temporary curtailment of production which affected Saskatchewan sour medium-gravity crude oil during the latter part of the year. Sales of natural gas reached 2.73 billion cubic feet, a 21% increase over last year's total of 2.26 billion cubic feet.



Revenues from all sources increased by 14% from \$2,968,000 to \$3,386,000. Earnings, incorporating for the first time on an equity basis Francana's share of the earnings of Trend Exploration Limited, totalled \$1,118,000, compared with \$650,000 in 1972. Francana's share of Trend's earnings (\$284,000) was for Trend's fiscal year ending June 30, 1973, and therefore does not reflect Indonesian production which commenced on September 15, 1973. Francana's earnings, excluding Trend, were \$834,000, an increase of 28%. The marked improvement in the 1973 financial results is largely attributable to increases in prices for crude oil and natural gas.

Francana's 1973 exploration and development program involved direct participation in a total of 22 wells which yielded nine oil wells and four gas wells. Indirect participation by way of farmouts included 26 wells and resulted in one oil well and 10 gas wells. The majority of these wells were drilled in Alberta. No significant new discoveries were made and most of the successful completions were extensions of, or developments in, previously productive areas. In the Arctic, other companies continued exploration on lands adjoining Francana's permits.

On the East Coast of Canada where Francana holds a 12.5% interest in 2.1 million acres located immediately offshore from Cape Breton Island, a structural feature covering an area in excess of 75 square miles was delineated by seismic equipment. If an offshore rig is available, the feature will be tested to a depth of 12,000 feet in late 1974.

*Francana's new gas-processing plant and gathering system in Alberta began operating in September, 1973.*

The Holmberg Mannville gas unit plant was completed and placed on production September 1, 1973. Francana is the operator and major interest holder with 36.3% of the unit.

Total exploration and development expenditures, including land acquisition and retention, geological and geophysical work, drilling and production equipment, totalled \$1,761,000, compared with \$1,808,000 in 1972.

Through its 30% shareholding interest in Trend Exploration Limited, Francana participated in several exploration successes during the past year, particularly in Indonesia and Canada. In Indonesia, Trend added three tertiary reef discoveries to the one reported in 1972. The Kasim and Jaya pools were placed on production September 1, at an initial rate of 40,000 barrels per day. Further expansion of the production facilities is planned for 1974. Exploration will be accelerated with the addition of a third seismic crew and a second drilling rig. Trend holds a 27% working interest in the 1.1 million acres covered by the production-sharing contract entered into with Pertamina, the Indonesian state-owned oil company. In Canada, Trend established oil and gas reserves at Acheson, Bon Accord and Carson Creek. At year-end, several applications for exploration licences in the Western hemisphere were pending. Trend has its headquarters in Denver, Colorado, and maintains offices in Calgary, London, England, Sydney, Australia, Singapore and Jakarta. Plans for 1974 include continued exploration in Indonesia, the drilling of a well in the North Sea, in Lancashire, England and the Tyrrhenian Sea offshore Italy, in addition to the wells planned to be drilled in the U.S. and Canada.

Beginning in 1973, governments of the Organization of Petroleum Exporting Countries (OPEC) abandoned the last vestige of price negotiating and began unilaterally to set prices for their oil. The Canadian Government, shortly thereafter, froze the domestic price of crude oil, thus triggering a chain of domestic political reactions which left prices, royalties, taxes and exploration incentives subject to frequent and disturbing changes. In this situation, it is difficult to forecast revenue and prepare for 1974. It is expected that Canadian prices will rise when the price freeze is lifted on April 1, 1974, and that future price trends will reasonably reflect both the higher costs and greater risks to which the industry is exposed. However, it is not known at this time what portion of any price increase will accrue to the producers.

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*Francana participated, either directly or through farmouts, in a 48-well drilling program in 1973.*



# manufacturing



Review of operations:  
continued

## Subsidiary and affiliated companies

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### Hudson Bay Diecastings Limited

Reasonable profits were being realized until November, 1973, by Hudson Bay Diecastings Limited, wholly owned by Hudson Bay Mining, when a major customer went bankrupt, thus substantially reducing the profit for the entire year.

On the other hand, sales for the year set a record, reflecting an increase of 20% in the production of 1973 model-year automobiles.



A second setback occurred late in the year when automobile manufacturers drastically curtailed production of large automobiles as the energy crisis became more acute in the United States. The result was that Hudson Bay Diecastings was forced to lay off many of its employees in December, a sharp reversal of the situation at midyear when a record 230 persons were employed. In addition, the lower production of automobiles made it practical to shut down the plant for two weeks at year-end to balance inventories with the lower demand from automobile manufacturers.

It is apparent that the automobile manufacturers face a period of readjustment as they modify their production schedules in order to produce fewer large automobiles and more compact models. This brings into sharp focus the need to diversify to reduce the degree of dependency on the automotive industry.

During the summer of 1973, Hudson Bay Diecastings started building a \$4-million plant to manufacture various grades of zinc oxides.

Scheduled to begin operations in mid-1974, the new 70,000-sq. ft. one-storey plant is located on the 15-acre property owned and occupied by Hudson Bay Diecastings in the Bramalea industrial park near Brampton, approximately 25 miles northwest of Toronto.

The new plant will have an initial capacity of 60 tons per day that will be increased gradually to the ultimate capacity of 100 tons daily.

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*Zinc-base diecastings for the automotive industry are plated with different metals in a series of tanks.*

The decision to build the plant in the Toronto area was based on significant changes in sales patterns plus the fact that recent advances in manufacturing technology and related new equipment could not be economically implemented to increase the production capacity of the 40-year-old zinc oxide plant operated in Montreal by Zochem Limited, also a wholly owned subsidiary of Hudson Bay Mining.

It is expected that additional savings in such areas as shipping and administration at the new plant will be realized through a close working relationship with the diecasting operation.

Although owned by Hudson Bay Diecastings, the new plant will be managed and operated by Zochem, which will also handle sales. Operations at the Montreal plant will be phased out gradually as production in the new Toronto plant advances toward full capacity.

#### Zochem Limited

A world-wide shortage of zinc oxide and more realistic prices in relation to costs resulted in the largest operating profit in the history of Zochem Limited, a wholly owned subsidiary of Hudson Bay Mining.



Sales were increased by 27% but further growth was prevented by the lack of additional capacity in the plant at Montreal. Exports account for approximately 28% of sales. Zocofax, Zochem's photoconductive-grade oxide, now accounts for 40% of total sales, almost matching sales to the rubber industry which until recently was the only major market for zinc oxide.

In view of current market conditions, it was possible to maintain satisfactory prices in North America. The same situation prevailed in Europe and Australia; Europe turned out to be the most profitable market for most of 1972.

Plant capacity was increased by 25% at midyear, primarily to produce more Zocofax. Operations were at 100% of capacity throughout the year and consumption of zinc purchased from Hudson Bay Mining rose accordingly. The increased production of zinc oxide more than offset the drop in zinc consumption following the decision in 1972 to suspend indefinitely the production of zinc dust until economic conditions are more favorable for this product.

It is expected that world markets will be short of zinc oxide for a few more years, indicating a bright future for both sales and profits.



#### Francana Minerals Ltd.

Financial results improved somewhat toward the end of the year as prices for sodium sulphate, both detergent and salt cake grades, moved upward in response to a stronger demand. However, limitations of plant capacity prevented sales from rising substantially higher than levels reached in 1972.



In view of an expected shortage, at least for the short term, of sodium sulphate, it was decided to start production of salt cake material in mid-January, 1974, at the plant of Sodium Sulphate (Saskatchewan) Ltd. at Alsask, located close to the Alberta-Saskatchewan border northwest of the Francana Minerals plant at Grant, Sask. Sodium Sulphate (Saskatchewan) Ltd. is wholly owned by Francana Minerals which is 60%-owned by Hudson Bay Mining.

At the Grant plant efforts are being directed toward producing only the higher-value detergent product. In addition, dredge mining is being considered as an alternative to the present method of recovering Glauber's salt. Also under consideration is an expansion of the plant to increase production capacity to 100,000 tons annually.

The improvement in demand for salt cake material has been attributed to the general shortage of sodium materials in the chemical industry and to the increased levels of production in the kraft paper industry. This situation represents a continuation of trends identified earlier in 1973 and it is expected that demand will remain strong beyond the end of 1974. The improvement in demand for detergent-grade products was particularly notable in the closing months of the year as detergent producers in the U.S. and Canada requested longer-term commitments from producers.

**Top:** Zochem Limited had to increase production of zinc oxide at its plant in Montreal as sales rose.

**Left:** Francana Minerals Ltd. may soon expand its sodium sulphate operations at Grant, Saskatchewan. 25

## Properties, subsidiaries and major holdings

### Principal addresses and contacts

#### Mine offices

Hudson Bay Mining and Smelting Co., Limited  
Flin Flon, Manitoba R8A 1N9

General manager: J. E. Goodman

Sylvite of Canada Division of Hudson Bay Mining  
and Smelting Co., Limited

P.O. Box 270, Rocanville, Saskatchewan S0A 3L0

General manager: D. C. Smith

#### Exploration offices

Hudson Bay Exploration and Development  
Company Limited

P.O. Box 28, Toronto-Dominion Centre,  
Toronto, Ontario M5K 1B8

Chief geologist: R. B. Cairns

Unit 52

2 Thorncliffe Park Drive, Toronto, Ontario M4H 1H2

Manager, Eastern exploration: P. L. Martin

Flin Flon, Manitoba R8A 1N9

Manager, Central exploration: R. L. Price

1695-555 Burrard St., Bentall Centre Tower No. 2  
Vancouver 1, British Columbia

Manager, Western exploration: R. A. Freberg

Box 4007, Whitehorse, Yukon Territory

Resident geologist: R. T. McIntosh

Room 7, 4A Court Street

Thunder Bay "P", Ontario P7B 2W4

Geologist: J. D. Friesen

#### Subsidiary companies

Hudson Bay Diecastings Limited  
P.O. Box 1050, Brampton, Ontario

General manager: G. F. Clark

Zochem Limited

P.O. Box 40, Station D, Montreal 22, Quebec

General manager: D. B. Clark

Francana Oil & Gas Ltd.

401 Pacific 66 Plaza, 700-6th Ave. S.W.,

Calgary, Alberta T2P 0T8

General manager: N. D. Knowles

Francana Minerals Ltd.

670 Bank of Canada Bldg., Regina,  
Saskatchewan S4P 0M8

General manager: R. V. Tomkins

Hudson-Yukon Mining Co., Limited

Flin Flon, Manitoba R8A 1N9



## Location maps

wholly or partly owned  
Canadian properties  
of Hudson Bay Mining  
and Smelting  
Co., Limited

### Map of Canada

Hudson-Yukon Mining Co. Limited	1
Stikine Copper Limited	2
Baffinland Iron Mines Limited	3
Churchill River Power Company Limited	4
Francana Minerals Ltd.	5
Francana Oil & Gas Ltd.	6
Sodium Sulphate (Saskatchewan) Ltd.	7
Sylvite of Canada	8
Manitoba Chromium Limited	9
Hudson Bay Diecastings Limited	10
Zinc Oxide Company of Canada Limited	11
Zochem Limited	12



### Map of Flin Flon / Snow Lake Area

Centennial Mine	a
Flin Flon Mine	b
White Lake Mine	c
Schist Lake Mine	d
Westarm Mine	e
Wim Mine	f
Anderson Lake Mine	g
Chisel Lake Mine	h
Dickstone Mine	i
Ghost Lake Mine	j
Stall Lake Mine	k
Osborne Lake Mine	l





## Two special Flin Flon programs

### A life could be at stake

All new employees at Flin Flon are given an eight-hour course in emergency first aid and more advanced instruction is available to those who request it. Supervisors must take the Standard Course. More than 60% of employees by year-end 1973 had received training. Hudson Bay Mining's safety program goes far beyond teaching first aid: it includes special instruction for mine-rescue teams, fire protection and on-the-job safety training. Over the years, a constant emphasis on working safely has produced a high safety performance—and 19 awards.

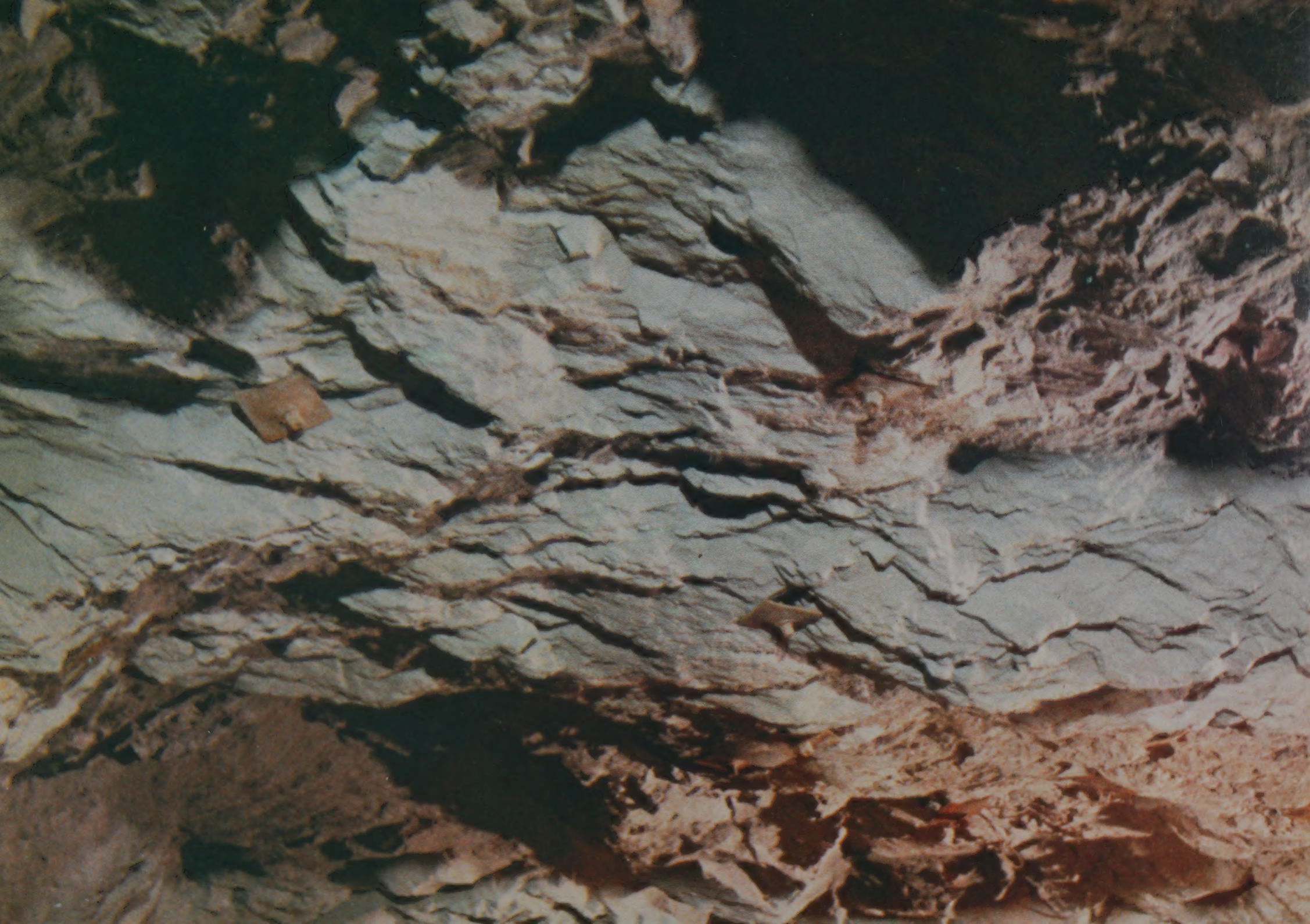
### Oats help keep the dust down

Tailings are the leftovers at Flin Flon after copper, zinc and other metals have been extracted from our ores. Because the tailings are loose and dry they pollute the air when the wind blows. For some time now, Hudson Bay Mining has been treating the tailings so that they will support plant life and thus keep the dust down. The initial experiments used small test plots; in 1973 two half-acres were seeded with oats, wheat and grasses: Brome, Quack, Rye and Fescue. The results were quite encouraging; so much so that in 1974 the environmental control department will seed four acres, adding some other grasses plus some native trees and shrubs. The experiment at Flin Flon is only one example of Hudson Bay Mining's anti-pollution activities.

*A class in emergency first aid for new employees at Flin Flon uses a helping hand from Oscar The Skeleton.*

**Right:** a field of oats—an unfamiliar sight at Flin Flon—is part of experiment to control dust from tailings.





# HUDSON BAY MINING AND SMELTING CO., LIMITED

## Consolidated Statement of Earnings

	For the quarter ended June 30		For the six months ended June 30	
	1974	1973	1974	1973
Revenue from sales of products less freight, refining and selling expenses .....	\$43,160,000	\$43,942,000	\$ 99,929,000	\$79,676,000
Equity in earnings of associated companies and joint venture .....	4,353,000	—	6,822,000	—
Investment and other income (including exchange) .....	1,234,000	780,000	1,502,000	1,353,000
	<u>48,747,000</u>	<u>44,722,000</u>	<u>108,253,000</u>	<u>81,029,000</u>
Operating costs, including concentrates purchased and exploration (1) .....	28,534,000	26,494,000	61,471,000	47,146,000
Depreciation, depletion and amortization of mine development expenditures .....	3,539,000	3,159,000	7,319,000	6,455,000
Interest and general administrative expenses .....	1,722,000	1,394,000	3,168,000	2,569,000
Income and provincial mining taxes .....	4,829,000	3,762,000	14,350,000	7,076,000
Earnings from operations .....	<u>10,123,000</u>	<u>9,913,000</u>	<u>21,945,000</u>	<u>17,783,000</u>
Minority interest in earnings of consolidated subsidiaries .....	715,000	85,000	902,000	195,000
Earnings before extraordinary item .....	<u>9,408,000</u>	<u>9,828,000</u>	<u>21,043,000</u>	<u>17,588,000</u>
Recovery of portion of loss on investment in Wellgreen Mine .....	—	1,518,000	—	2,704,000
Earnings for the period .....	<u>\$ 9,408,000</u>	<u>\$11,346,000</u>	<u>\$ 21,043,000</u>	<u>\$20,292,000</u>
Shares outstanding .....	9,941,658	9,041,433	9,941,658	9,041,433
Earnings per share:				
Before extraordinary item .....	\$ .95	\$ 1.08	\$ 2.12	\$ 1.94
After extraordinary item .....	<u>\$ .95</u>	<u>\$ 1.25</u>	<u>\$ 2.12</u>	<u>\$ 2.24</u>

The financial results are stated in Canadian currency and are subject to year-end audit.

(1) Purchases of concentrates totalled \$12,904,000 (1973 — \$8,869,000) in the second quarter and \$26,355,000 (1973 — \$13,489,000) for the six months ended June 30.

To the Shareholders:

Net earnings for the first six months of 1974 totalled \$21,043,000, equal to \$2.12 per share, compared with \$20,292,000, or \$2.24 per share, for the same period of 1973. Total revenue for the first half was \$108,253,000, compared with \$81,029,000 for the first half of 1973. The per-share earnings reflect the 900,000 additional shares issued in the latter part of 1973 that increased the number of shares outstanding to 9,941,658 from 9,041,433.

Second-quarter earnings were \$9,408,000, equivalent to 95¢ per share, compared with \$11,346,000, or \$1.25 per share, in 1973. Revenue for the quarter totalled \$48,747,000, compared with \$44,722,000 in 1973.

A dividend of 40¢ per share on Class A and Class B shares was declared for the second quarter, payable on July 30 to shareholders of record July 10.

Production of copper and zinc during the quarter was less than anticipated, due largely to the continuing shortage of experienced miners and to unforeseen difficulties experienced by suppliers of concentrates. Production of potash by the Sylvite of Canada division was virtually at 100% of rated capacity in response to the continuing high demand for fertilizer.

During the second quarter, the overseas price for copper, zinc and gold weakened, reflecting primarily higher inventories as business activity in several countries declined. Prices for potash, however, continued their upward trend and there is no indication that demand will be reduced because of higher prices.

In June, Hudson Bay Mining and Anglo American Corporation of Canada Limited shared equally in the purchase of the 58.1% interest in Lytton Minerals Limited, of Vancouver, held by Patino, N.V., of The Hague. Subsequent purchases of shares from other shareholders increased the joint shareholding in Lytton to 65.8%.

Lytton holds a 49% interest in Minas del Otono, S.A., of Mexico City, which owns the La Verde copper deposit 200 miles west of Mexico City. La Verde's proven ore reserves have been reported as 81.3 million short tons grading 0.699% copper, plus gold and silver values.

In May, Francana Oil & Gas Ltd., of Calgary, which is 52.5%-owned by Hudson Bay Mining, acquired control of Trend Exploration Limited, of Denver, Colorado, an international oil and gas exploration and producing company. Francana had previously held 30% of Trend.

H. A. McKENZIE,  
President.

July 26, 1974.

## HUDSON BAY

MINING AND SMELTING CO., LIMITED

### INTERIM REPORT TO SHAREHOLDERS

**6 MONTHS**

**Ended June 30, 1974**

